

Appendix C

Glossary of Broadband Terms

Glossary

- **3G** – *Third Generation*: Intended to be the next great wireless technology, wideband mobile services and applications offering users faster access to the web.
- **ADSL** – *Asymmetric Digital Subscriber Line*: DSL service with a larger portion of the capacity devoted to downstream communications, less to upstream. Typically thought of as a residential service.
- **ATM** – *Asynchronous Transfer Mode*: A data service offering by ASI, that can be used for interconnection of customer's LAN. ATM provides service from 1 Mbps to 145 Mbps utilizing Cell Relay Packets.
- **Bandwidth** – The amount of data transmitted in a given amount of time; usually measured in bits per second, kilobits per second, and megabits per second.
- **Bit** – A single unit of data, either a one or a zero. In the world of broadband, bits are used to refer to the amount of transmitted data. A kilobit (Kb) is approximately 1,000 bits. A megabit (Mb) is approximately 1,000,000 bits.
- **BPL** – *Broadband Over Powerline*: A theoretical technology that would provide broadband service over existing electrical power lines.
- **BPON** – *Broadband Passive Optical Network*: BPON is a point-to-multipoint fiber-lean architecture network system which uses passive splitters to deliver signals to multiple users. Instead of running a separate strand of fiber from the CO to every customer, BPON uses a single strand of fiber to serve up to 32 subscribers.
- **Broadband** – A descriptive term for evolving digital technologies that provide consumers with integrated access to voice, high-speed data service, video-demand services, and interactive delivery services (e.g. DSL, Cable Internet).
- **CAP** – *Competitive Access Provider*. (or "Bypass Carrier") A Company that provides network links between the customer and the Inter-Exchange Carrier or even directly to the Internet Service Provider. CAPs operate private networks independent of Local Exchange Carriers.
- **CBO** – *Community Based Organizations*: Groups serving a community that are eligible for California Teleconnect Fund (CTF) Subsidy.
- **Cellular** – A mobile communications system that uses a combination of radio transmission and conventional telephone switching to permit telephone communications to and from mobile users within a specified area.
- **CEQA** – *California Environmental Quality Act*: Enacted in 1970, it requires government agencies to evaluate the environment impact of public construction projects.

- **CLEC** – *Competitive Local Exchange Carrier*: Wireline service provider that is authorized under state and Federal rules to compete with ILECs to provide local telephone service. CLECs provide telephone services in one of three ways or a combination thereof: a) by building or rebuilding telecommunications facilities of their own, b) by leasing capacity from another local telephone company (typically an ILEC) and reselling it, and c) by leasing discrete parts of the ILEC network referred to as UNEs.
- **CO** – *Central Office*: A circuit switch where the phone lines in a geographical area come together, usually housed in a small building.
- **Coaxial Cable** – A type of cable that can carry large amounts of bandwidth over long distances. Cable TV and cable modem service both utilize this technology.
- **CPCN** – *Certificate of Public Convenience and Necessity*: Authorization given by the CPUC to telecommunications carriers in order to provide service in the state of California.
- **CPUC** – *California Public Utilities Commission*: The organization mandated by the state Constitution to regulate public utilities in California.
- **CTF** – *California Teleconnect Fund*: A public program that provides subsidizes phone and data service to schools, hospitals, CBOs, and other qualified institutions in California. Benefits are calculated net of E-rate Federal subsidy.
- **CWDM** – *Coarse Wavelength Division Multiplexing (WDM)*: is generally held to be WDM with less than 8 active wavelengths per fibre.
- **DDTP** – *Deaf and Disabled Telephone Program*: A public program that provides benefits, including specialized equipment, to qualified California disabled customers.
- **Dial-Up** – A technology that provides customers with access to the Internet over an existing telephone line.
- **DLEC** – *Data Local Exchange Carrier*: DLECs deliver high-speed access to the Internet, not voice. DLECs include Covad, Northpoint and Rhythms.
- **Downstream** – Data flowing from the Internet to a computer (Surfing the net, getting E-mail, downloading a file).
- **DSL** – *Digital Subscriber Line*: The use of a copper telephone line to deliver “always on” broadband Internet service.
- **DSLAM** – *Digital Subscriber Line Access Multiplier*: A piece of technology installed at a telephone company's CO and connects the carrier to the subscriber loop (and ultimately the customer's PC).
- **DWDM** – *Dense Wavelength Division Multiplexing (WDM)*: A SONNET term which is the means of increasing the capacity of Sonet fiber-optic transmission systems.

- **E-Rate** – A Federal program that provides subsidy for voice and data lines to qualified schools, hospitals, CBOs, and other qualified institutions. The subsidy is based on a percentage designated by the FCC. CTF benefits are calculated net of the E-rate subsidy.
- **EON** – *Ethernet Optical Network*: The use of Ethernet LAN packets running over a fiber network.
- **EvDO** – *Evolution Data Only*: EvDO is a new wireless technology that provides data connections that are 10 times as fast as a regular modem.
- **FCC** – *Federal Communications Commission*: A Federal regulatory agency that is responsible, among other things, of regulating VoIP.
- **FTTN** – *Fiber To The Neighborhood*: A hybrid network architecture involving optical fiber from the carrier network, terminating in a neighborhood cabinet with converts the signal from optical to electrical.
- **FTTP** – *Fiber To The Premise (Or FTTB – Fiber To The Building)*: A fiber optic system that connects directly from the carrier network to the user premises.
- **GPON** – *Gigabyte-Capable Passive Optical Network*: GPON uses a different, faster approach (up to 2.5 Gbit/s in current products) than BPON.
- **GPS** – *Global Positioning System*: A system using satellite technology that allows an equipped user to know exactly where he is anywhere on earth.
- **GSM** – *Global System for Mobile Communications*: This is the current radio/telephone standard in Europe and many other countries except Japan and the United States.
- **HFC** – *Hybrid Fiber Coaxial Network*: An outside plant distribution cabling concept employing both fiber optic and coaxial cable.
- **IEEE** – *Institute of Electrical and Electronics Engineers*
- **ILEC** – *Incumbent Local Exchange Carrier*: The traditional wireline telephone service providers within defined geographic areas. Prior to 1996, ILECs operated as monopolies having the exclusive right and responsibility for providing local and local toll telephone service within LATAs. ILECs include regional Bell operating companies such as SBC and non-Bell affiliated companies such as SureWest, both in California.
- **IP-VPN** – *Internet Protocol -Virtual Private Network*: A software-defined network offering the appearance, functionality and usefulness of a dedicated private network
- **ISDN** – *Integrated Services Digital Network*: An alternative method to simultaneously carry voice, data and other traffic, using the switched telephone network.

- **ISP** – *Internet Service Provider*: A company providing Internet access to consumers and businesses, acting as a bridge between customer (end-user) and infrastructure owners for dial-up, cable modem and DSL services.
- **Kbps** – *Kilobits per second*: 1,000 bits per second. A measure of how fast data can be transmitted.
- **LAN** – *Local Area Network*: A geographically localized network consisting of both hardware and software. The network can link workstations within a building or multiple computers with a single wireless Internet connection.
- **LATA** – *Local Access and Transport Areas*: A geographic area within which a divested Regional Bell Operating Company is permitted to offer exchange telecommunications and exchange access service. Calls between LATAs are often thought of as long distance service. Calls within a LATA (IntraLATA) typically include local and local toll services.
- **Local Loop** – A generic term for the connection between the customer's premises (home, office, etc.) and the provider's serving central office. Historically, this has been a wire connection; however, wireless options are increasingly available for local loop capacity.
- **MAN** – *Metropolitan Area Network*: A high-speed data intra-city network that links multiple locations with a campus, city or LATA. A MAN typically extends as far as 50 kilometers.
- **Mbps** – *Megabits per second*: 1,000,000 bits per second. A measure of how fast data can be transmitted.
- **Overbuilders** – Building excess capacity. In this context, it involves investment in additional infrastructure project to provide competition.
- **OVS** – *Open Video Systems*: OVS is a new option for those looking to offer cable television service outside the current framework of traditional regulation. It would allow more flexibility in providing service by reducing the build out requirements of new carriers.
- **PON** – *Passive Optical Network*: A Passive Optical Network consists of an optical line terminator located at the Central Office and a set of associated optical network terminals located at the customer's premise. Between them lies the optical distribution network comprised of fibers and passive splitters or couplers. In a PON network, a single piece of fiber can be run from the serving exchange out to a subdivision or office park, and then individual fiber strands to each building or serving equipment can be split from the main fiber using passive splitters / couplers. This allows for an expensive piece of fiber cable from the exchange to the customer to be shared amongst many customers thereby dramatically lowering the overall costs of deployment for fiber to the business (FTTB) or fiber to the home (FTTH) applications.

- **Rights-of-Way** – Legal rights of passage over land owned by another. Carriers and service providers must obtain rights-of-way to dig trenches or plant poles for cable systems, and to place wireless antennae.
- **RPR** – *Resilient Packet Ring*: RPR uses Ethernet switching and a dual counter-rotating ring topology to provide SONET-like network resiliency and optimized bandwidth usage, while delivering multi-point Ethernet/IP services.
- **RUS** – *Rural Utility Service*: A division of the United States Department of Agriculture, it promotes universal service in unserved and underserved areas of the country with grants, loans, and financing.
- **SONNET** – *Synchronous Optical Network*: A family of fiber-optic transmission rates.
- **Streaming** – A Netscape innovation that downloads low bit text data first, then the higher bit graphics. This allows users to read the text of an Internet document first, rather than wait for the entire file to load.
- **Subscribership** – Subscribership is how many customers have subscribed for a particular telecommunications service.
- **Switched Network** – A domestic telecommunications network usually accessed by telephones, key telephone systems, private branch exchange trunks, and data arrangements.
- **T-1** – *Trunk Level 1*: A digital transmission link with a total signaling speed of 1.544 Mbps. It is a standard for digital transmission in North America.
- **T-3** – *Trunk Level 3*: 28 T1 lines or 44.736 Mbps.
- **ULTS** – *Universal Lifeline Telephone Service*: A public program that provides subsidized basic telephone service to qualified low-income individuals in California.
- **UNE** – *Unbundled Network Elements*: Leased portions of a carrier's (typically an ILEC's) network used by another carrier to provide service to customers.
- **Universal Service** – The idea of providing every home in the United States with basic telephone service.
- **Upstream** – Data flowing from your computer to the Internet (sending E-mail, uploading a file).
- **VDSL** – *Very High Data Rate Digital Subscriber Line*: A developing technology that employs an asymmetric form of ADSL, with projected speeds of up to 155 Mbps.
- **Video On Demand** – A service that allows users to remotely choose a movie from a digital library and be able to pause, fast-forward, or even rewind their selection.

- **VLAN** – *Virtual Local Area Network*. A network of computers that behave as if they are connected to the same wire even though they may actually be physically located on different segments of a LAN.
- **VoIP** – *Voice Over Internet Protocol*. A new technology that employs a data network (such as a broadband connection) to transmit voice conversations.

- **VPN** – *Virtual Private Network*: *VPN* is a network that is constructed by using public wires to connect nodes. For example, there are a number of systems that enable you to create networks using the Internet as the medium for transporting data. These systems use encryption and other security mechanisms to ensure that only authorized users can access the network and that the data cannot be intercepted.
- **WiMax** - WiMax is a wireless technology that provides high-throughput broadband connections over long distances. WiMax can be used for a number of applications, including "last mile" broadband connections, hotspot and cellular backhaul, and high-speed enterprise connectivity for businesses.
- **Wireless** – Telephone service transmitted via cellular, PCS, satellite, or other technologies that do not require the telephone to be connected to a land-based line.
- **Wireless Internet** – 1) Internet applications and access using mobile devices such as cell phones and palm devices. 2) Broadband Internet service provided via wireless connection, such as satellite or tower transmitters.
- **Wireline** – Service based on infrastructure on or near the ground, such as copper telephone wires or coaxial cable underground or on telephone poles.

Sources include the Glossary of the July 5, 2002 report on "The Status of Telecommunications Competition in California" submitted to the California State Legislature by the CPUC, the FCC Website, the Intel.com Website, Webopedia.com, the Passive Optical Networks Forum, and Newton's Telecom Dictionary, 16th Expanded and Updated Edition.